

**ABSTRACT**

A method for separating a sample into components by two-dimensional electrophoresis uses an IPG strip, and a gel slab which are spaced apart and carried on a single generally planar support means. The planar support means is first oriented in a generally vertical plane and the first electrophoretic separation medium is oriented in a horizontal plane spaced above or below the second electrophoretic separation medium by a gap. A first dimension separation of a sample mixture in the strip is then carried out while the strip and slab are separated by a non-electrically conducting liquid which is substantially immiscible with water and is non-extractive of water preferably paraffin oil. After the first separation has been carried the support means is tilted so that the first strip is at an angle to the horizontal and the paraffin is flushed out from the gap between the strip and the slab. Next agarose gel containing buffer is flowed into the gap to allow transfer of sample molecules from the strip to the slab under the influence of an electric field.